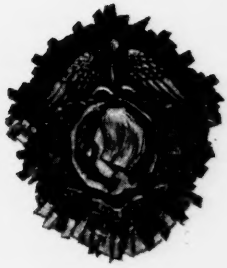
Journal of Dentistry for Children



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SECRETARY'S MESSAGE

Immediately preceding the 1947 Chicago Mid-Winter Meeting this Society under the leadership of its new President, Dr. Jack M. Wisan, held its first participative meeting since the 1941 meeting of the A.D.A. in Houston.

During the evening hours of February 8th an Executive Council and States Units delegate session was held, at which time the loose ends of the administrative phases of the Society were properly "spliced", and the officers and committeemen are now busy preparing for the real "rejuvenation" that will occur in August at Boston.

A joint session of this Society and the A.D.A. Council on Dental Health was directed by our President Jack Wisan and the Chairman of the Council on Dental Health, Dr. Hugo Kulstad. The morning and afternoon sessions were well attended and a lively discussion followed each. The general theme of the meeting was "Are dental services available to children? If not, why not?", and "Methods for making more and better dental services available to children." Without extending individual credits to those who contributed with committee arrangements and topic assignments the A.S.D.C. can well be proud of its members who offered so much.

Preliminary arrangements have already been effected to present a very interesting joint meeting with the American Association of Public Health Dentists and this Society in Boston. Watch the pages of the Journal for more about hotel headquarters, dates, places of meetings, and details of the program. Plan to be in Boston for the meeting.

As Secretary I must bring to the attention of many that they have yet to pay their dues for 1947. The response on the first mailing of statements was very pleasing. The "Seconds" are making the mails and soon will be concluded. Get your dues in the mail immediately to assure a continued uninterupted arrival of your Journals. The mailing list has recently been corrected to the membership files in my office. If you should change your address inform me immediately that steps can be taken to correct the records of the Society.

The many friends of our Past President Dr. Haidee Weeks of New Orleans, Louisiana will be sorry to hear that due to a serious accident to herself last summer she has been forced to retire from her many professional activities. She surely would appreciate hearing from her many close friends of this organization which she calls "Her Baby" and to which she has contributed so much.

R. M. Erwin, Jr.

The Use of General Anesthesia in Children's Dentistry

NEVILLE A. BOOTH, D.M.D.

EDITOR'S NOTE:

Neville Booth, a graduate of Harvard Dental School, is engaged in the private practice of Oral Surgery. He is consulting oral surgeon, Norwood Hospital, a member of the American Society of Anesthesiologists, and of the American Society for Advancement of General Anesthesia in Dentistry. The accompanying paper was presented before the Massachusetts Unit of the A.S.D.C., Doctor Booth's home bailiwick, and should be read with interest by all of us, even tho' we do not administer or operate under general anesthesia.

A.E.S.

General anesthesia has been described as that state of the body in which there is a loss of pain sensations due to a loss of conciousness. This condition is brought about by the introduction into the body of some drug possessing anesthetic properties. The drug may be administered rectally, intravenously or by inhalation. The latter method is most practical for the dental office and it is this method which will be considered in this paper.

The use of inhalation anesthetic agents presupposes a knowledge of the anatomy and physiology of the body as a whole and specifically the cardio-respiratory system which may be considered as the transporation system of the body. A normal transporation system is one consisting of a normal heart, normal blood and blood vessels, normal lungs and normal air passages. Unfortunately few of our patients have a normal transporation system.

Inhalation anesthesia is dependent upon the transportation of oxygen and the anesthetic agent from outside the body, through the lungs and via the blood stream to the brain, and the elimination of waste products, particularly carbon dioxide. This process depends upon the diffusibility of gases through the body with the greatest possible efficiency and least possible disturbance of normal physiological function. The anesthetic agent must in no way cause a chemical change in the circulating blood.

The rapidity of induction and the emergence of the patient from inhalation anesthetic agents is dependent to some degree upon the surface area of the alveoli air spaces of the lungs which can be exposed to the gases. A greater surface area will result in a more rapid action of the agent. Therefore respiratory stimulation is a definite asset. Any condition which decreases the function of the respiratory system will interfere with anesthesia. Diminished respiratory volumes, congestion of the lungs as in bronchitis and asthma, and the presence of mucous are factors which must be considered by the anesthetist.

The role of the circulating blood is also important. Certain organs have a greater circulation than other parts of the body. The brain, for example, is well supplied with blood and therefore is readily influenced by anesthetic agents. The rapid-acting agents which are available to the dentist affect the brain and produce a satisfactory level of anesthesia without causing a saturation of other tissues of the body. Therefore they permit a rapid recovery. An agent such as ether affects the brain and saturates other parts of the body, resulting in a slow elimination and delayed recovery.

We must not lose sight of the fact that the live body is dependent upon an adequate supply of oxygen at all times. Atmospheric air at sea level contains approximately twenty per cent oxygen. Inadequate oxygenation for more than a few minutes may be fatal or severely damaging to certain organs of the body, particularly to parts of the brain. Although the actual time during which a body can withstand a diminished oxygen volume and the accompanying degree of damage are indeterminable factors, they should be kept in mind

by the anesthetist when using any asphyxial anesthesia.

Anoxemia or an inadequate oxygenation may occur from any one or a number of conditions. The arterial blood may lack full oxygen saturation because of a lack of available oxygen in the air or in the anesthetic mixture or through the inability of the oxygen present to penetrate the congested alveoli air spaces. The circulating blood may lack its normal volume or the hemoglobin may be unable to carry its full quota of oxygen. In certain systemic conditions and some circulatory disturbances, the blood flow becomes sluggish or stagnant, particularly in the terminal capillaries, with a resulting failure of the tissue cells to obtain their normal requirement of oxygen. A normal complement of oxygen may be available to the tissue cells, but the cell itself is unable to release its carbon dioxide. It is important to remember that healthy cells will utilize the oxygen made available to them but that an excess of oxygen will not stimulate damaged or poisoned cells.

The elimination of carbon dioxide is also important. In small amounts it serves as a respiratory stimulant but in large amounts it becomes a respiratory depressant. The latter condition may occur when respirations are prevented by obstruction in the respiratory tract or when excessive rebreathing is utilized. The total blockage of carbon dioxide will prove fatal in a very short time.

Fear and emotional excitement are the most frequent factors in producing a pre-anesthetic rise in metabolism in an otherwise normal individual. Children, because of their immature and unstable nervous systems, are the most difficult patients. Their normally high metabolic rate combining with such factors as fear, excitement, and pain must be compensated for by the anesthetist.

To compensate for an increased metabolism, the anesthetist must combine a careful selection of the anesthetic agent with a proper psychological approach with, when necessary, the judicious use of premedicating drugs. Opiates, morphine and scopolamine are direct metabolic depressants, but their use is not always practical in the dental office. Barbiturates reduce the metabolism only when given in large doses. In the average dose the effect is negligible except to partially allay emotional excitement.

When premedication is indicated, there are certain precautions which must be observed. Sufficient time must elapse between the administration of premedication and anesthesia in order that the full effects of the drug may be obtained. The barbiturates, by oral administration, require at least thirty minutes. Absorption can be speeded if the patient has an empty stomach and if the capsule is opened or punctured before it is ingested. Parents and the patient should be warned of the reactions which may be noted following the use of barbiturates.

In summarizing the role of metabolism in dental anesthesia, one must remember that a nitrous oxide anesthesia is almost impossible to administer to patients who have a high metabolic rate, for a difference of but one or two percent in the mixture may make or break the anesthesia.

The majority of general practitioners do not take a history of their patients but evaluate their physical condition from their appearance and reactions during visits. When the time comes for a patient to require a general anesthesia, either no questions are asked, or the patient is subjected to a history-taking which would have been more valuable if taken at the initial visit and made a part of the patient's office record. Since in many cases the patient is unknown to the anesthetist until the time of the appointment, the anesthetist is required to be a particularly keen diagnostician. He is not expected to perform a complete physical examination but he must obtain his information by observation and questions. The examination should be complete and accurate for the information desired.

The general physical characteristics and behavior can be noted as the child enters the office. The facies or facial characteristics must also be observed and can be noted during the questioning and without the patient's knowledge. The eyes of a person in good health show a sparkle which is not present in a person with a disease, who is suffering, or under the influence of drugs. The adenoid face and mouth breathing are characteristics which should be readily observed.

In questioning the patient or parent, emphasis should be placed upon such past conditions as rheumatic fever, scarlet fever, blood dyscrasias and repiratory disorders—conditions which may have a direct bearing on the anesthesia or on the post-operative recovery of the patient. Inquire of the general health during the past few years and of any sicknesses necessitating hospitalization or medical supervision. The date of the last complete physical examination and the name of the family physician should also be known. A patient who is under medical supervision or who is taking any drugs or medicines may be better treated by the dentist after consultation with the physician.

Complications associated with the upper respiratory system are not uncommon in children. In the pre-anesthetic examination the patient should be asked to cough several time and thereby clear the throat of mucous. Blowing the nose will serve the same purpose for the nasal passages. Nasal obstructions such as a deviated septum, enlarged turbinates, nasal polyps and enlarged adenoids and tonsils should be recognized prior to anesthesia. When an increased pressure of the gases is not sufficient to overcome these obstructions, naso-pharyngeal tubes may be indicated.

The recording of the patient's temperature as part of the preanesthetic examination is of value. If the temperature is elevated and there is reason to suspect infection or if the patient has experienced chills, a careful evaluation of the general physical condition should precede any anesthesia.

The psychological preparation of the patient is equally as important as the examination. Most people look forward to a dental appointment with fear and apprehension and the child is no exception. The mental instability of children, combined with fear and fright, places them at the top of the list of resistive patients. Someone has said that psychology is the best premedication for children. This is a very true statement and should lead more dentists to premedicate heavily with good psychology. Most children over four or five years of age are old enough to be reasoned with and are amenable to conversation. Treat the child as a grown-up and you flatter his ego. Since most children are interested in knowing what is being done, the anesthetist can utilize this natural curiosity by explaining what he is about to do and especially what the child can do to help the procedure.

During the introduction, induction, and emergence from general anesthesia, only the anesthetist should talk to the patient. The sound of a familiar voice will reassure the patient and will aid in controlling the subconscious mind, particularly during the period of delirium and excitement of the induction and emergence. The remarks to the patient must be spoken slowly, clearly, and in simple terms. It must be remembered that two patients rarely react alike under the influence of a general anesthesia and that a patient may not react the same way twice under anesthesia. Therefore, while the experience of a previous anesthesia should not be entirely overlooked, the anesthetist should give complete preanesthetic instructions to the patient before each administration.

Our consideration of the child would not be complete without some mention of the parents. Their presence is of value during the examination but the doctor should direct his questions to the child unless he finds that the conversational approach is not adequate. In this case, information must be obtained from the parent. The doctor should, at any rate, acquaint the parent with his findings and plan of treatment. The parent should also be warned of the vocal stimulation which may occur during the induction and emergence and should be made to understand that no operation is performed until the patient is asleep. A word of warning at this time eliminates the necessity for making an excuse after an incident has occurred. Parents do not belong in the operating room during the course of the operation except when the child's behavior is so bad that force is required to control him. In these rare cases the parent may be permitted to remain until the induction is completed but he should be requested to leave before the operation commences.

Having considered the patient and his problems, we are now ready to consider the anesthesia. General anesthesia may be described as being complete or incomplete. An understanding of what constitutes a complete anesthesia is essential to a knowledge of general

anesthesia. A complete anesthesia consists of three parts: the induction, the maintenance stage, and the recovery. The induction extends from the beginning of administration until muscular relaxation is obtained. This carries the patient through the period of delirium, excitement, and rigidity. The induction is the period which presents the greatest difficulties to the anesthetist and in the average dental anesthesia, is the period of greatest danger to the patient.

The onset of muscular relaxation is considered the maintenance stage and the period during which operative procedures may be best performed. At the completion of the operative procedure, the anesthetic is removed and the patient returned to consciousness through the recovery stage. Again the patient passes through a potential excitement or delirium period followed by a return of the reflexes and finally by consciousness. The duration of the maintenance stage in a complete anesthesia is dictated largely by the operator, provided the physical condition of the patient is satisfactory. It should never be extended for the sake of completing a procedure if the safety of the patient is endangered.

An incomplete anesthesia is characterized by periods of induction and recovery but lacks the maintenance stage. It does, however, allow a brief period during which minor surgical procedures may be performed. Signs and symptoms change rapidly and differ slightly from the normal signs as seen in a complete anesthesia. The use of this type of anesthesia requires a thorough knowledge of the administration techniques, a familiarity with the signs and symptoms of the various agents, and a well planned, quickly executed operative procedure. As most office procedures for children can be performed within a few minutes, incomplete anesthesia has great practical value.

The inhalation anesthetic agents which are commonly used and which fulfill the needs of children's dentistry are nitrous oxide, ethyl chloride and vinethene.

Nitrous oxide needs no introduction to the dentist. Since its early use about one hundred years ago, this agent has played a dual role. Its properties more nearly fulfill the requirements for the ideal inhalation anesthetic than any other agent. It has no unpleasant odor and is non-irritating to the tissues of the mouth and throat. It does, however, have serious limitations which should be kept in mind whenever this agent is used. Nitrous oxide is the least potent of the inhalation anesthetic agents and does not permit complete muscular relaxation. Most dental anesthesias with nitrous oxide are carried on with an oxygen percentage greatly below that to which the body is normally accustomed. Brain damage with resulting personality changes have been recorded in the literature and are directly attributed to the administration of nitrous oxide by techniques which restricted the oxygen intake below normal physiological requirements.

Ethyl chloride is one of the rapid-acting agents which has many advantages for minor surgical procedures in children, particularly the removal of deciduous teeth and the incision of abscesses. The succesful use of ethyl chloride is dependent upon experience and the recognition of certain fundamental principles. The technique which was devised at the Forsyth Dental Infirmary for Children, Boston, utilizes an incomplete anesthesia designed to eliminate pain to the patient with the use of a minimum amount of the agent and as large amount of air as is permissible. No attempt is made to gain the third or surgical stage, for to secure relaxation and quiet, a large amount of ethyl chloride must be given which would defeat the purposes of the technique and increase the potential dangers.

The reactions of children to this type of anesthesia are so varied that it is impossible to describe them all. The typical text-book description of a smooth induction, quiet dream, and pleasant awakening does occur, but crying and vocal stimulation are not uncommon even with cooperative patients and under the most ideal conditions.

The signs and symptoms of anesthesia occur so rapidly with ethyl chloride that the anesthetist must anticipate and recognize them at their earliest manifestation. The respirations are of great value as signs. Irregular respirations during the induction become more regular as the correct level of anesthesia or deep analgesia is reached. This level is frequently accompanied by a slight snore.

The eyeballs lose their normal movement and drift or roll from side to side. The eyelid loses some of its reflex movement but becomes stimulated when touched. A finger passed in front of the eye will elicit no reflex from the lid or eyeball. The patient is quiet and relaxed.

It is frequently observed that following the removal of the mask from the face the anesthesia momentarily deepens. This has been termed "Secondary Anesthesia" and may cause serious consequences, particularly when it occurs following an initially deep level of anesthesia.

Care must be taken during the administration that the agent is dropped or sprayed on the gauze intermittently since the formation of a frost restricts respirations and prevents the patient from obtaining either air or ethyl chloride.

Vinethene has gained wide favor with the dental profession owing to its ease of administration, rapidity of action, speed of recovery, and lack of post-operative complications. It is a derivative of ether and possesses a potency comparable to ether but greater than nitrous oxide. It possesses an ethereal odor but this disadvantage may be overcome by a careful administrative technique. Its other advantages, together with the fact that its administration permits a high oxygen volume in the mixture, makes it an ideal agent for the dental office.

Vinethene may be administered by the open drop method or by a closed method in conjunction with nitrous oxide and oxygen. It may be used for a complete or incomplete anesthesia. In the latter use, a state of deep analgesia is obtained and complete cooperation of the patient is necessary for success.

The signs of anesthesia with vinethene are not so distinct as with nitrous oxide but are somewhat similar to those under ethyl chloride. The anesthetist must be familiar with the characteristic signs of general anesthesia and then must understand the variations with particular agents. The excitements under vinethene differ from those experienced with nitrous oxide. They occur less frequently, are of shorter duration, and are less violent.

General anesthesia for ambulatory dental patients presents certain potential complications. The early recognition and correction of the complications will aid in a smooth anesthesia and successful operation. Patients scheduled for general anesthesia should be given strict instructions regarding their diet. A light refreshment two hours before appointment is preferable to an empty stomach. Creams, fats and other indigestible foods should be avoided. Although the stomach is normally emptied within one and one-half hours after the ingestion of a meal, there are times when it requires several hours for this process to be completed. This is especially true of a person under emotional excitement.

A correct chair position is of utmost importance. An open airway must be maintained at all times but by a backward tilting of the entire chair, the patient is prevented from sliding forward or arching his back. The normal foot rest should be eliminated, thus removing the fulcrum from which the patient braces himself. The position of the patient during the induction should be arranged for the convenience of the anesthetist.

The use of some type of restraint should be routine with all general anesthesias. The time at which the restraint is employed depends upon the doctor and the temperament of the patient. For small children a large sheet or thin blanket wrapped several times around the patient, whose hands are held at the sides, will serve as an excellent restraint. The patient is hardly conscious of the restraint but at the same time, his hands are prevented from interfering with the doctor. The cooperative child who has been properly prepared psychologically will offer little resistance to the careful application of restraints.

Many otherwise satisfactory anesthesias have been spoiled by a poorly inserted or badly placed mouth pack. The purpose of the pack is to prevent air from entering and to prevent the aspiration of blood, saliva, and foreign bodies. A pack which does not fulfill these requirements should be changed. A pack which becomes soaked with blood or saliva during the course of the operation should be replaced.

Patients who become nauseated and vomit during the induction should be returned to consciousness and the operation postponed. Rarely is an office case of such urgency that

the delay of a few hours or even a day is not better than the possibility of aspiration of vomitus. Nausea and vomiting occuring during emergence may be due to large and frequent variations in the anesthetic mixture or to blood and saliva which is permitted to enter the pharynx and stimulates the vomiting reflex. The mouth should be cleared of blood and saliva prior to the removal of the mouth pack.

Post-anesthetic difficulties with respiration can be minimized by allowing the mouth prop to remain in position until the patient has regained consciousness sufficiently to assist in its removal. The prop will thus aid in maintaining an open airway. It permits ready access to the mouth in case of emergency and if the patient aids in its removal, he indicates that he is regaining consciousness.

In addition to the local factors associated with complications, there are certain systemic conditions with which the doctor should be familiar. Auricular and ventricular fibrillations are probably the cause of most sudden deaths, particularly in the dental office. Fibrillations occur when an unsynchronized contraction and relaxation of the individual cardiac muscle fibers takes place which is not sufficient to provide circulation of blood. If the fibrillation passes before the reserve supply of oxygen in the coronary vessels is consumed, the heart will regain its normal activity. The condition occurs without warning and is of short duration, probably lasting less than one minute and terminating in either recovery or death. Emotional excitement and fear plus the deliriums of second stage anesthesia, particularly in the age group of greatest physiological activity from five to thirty years, are the most frequent etiological factors. The fibrillation manifests itself in a sudden stoppage of the pulse followed immediately by cessation of respiration, which may resemble breath-holding. Artificial respiration with oxygen should be instituted immediately.

Breath-holding during the induction is voluntary. Respirations will become stimulated as the carbon dioxide threshold rises but may be hastened by momentarily removing the mask until breathing is resumed. Cessation of respiration after the loss of consciousness is due to an obstructed airway or anesthetic overdose.

Spasms of the pharyngeal and laryngeal muscles are not infrequent if the anesthetist carelessly allows sudden increases of irritating vapors and if respiratory congestion is present. The maintenance of an open airway and the administration of oxygen under pressure is beneficial.

"Tongue-swallowing" occurs when complete muscular relaxation allows the base of the tongue to slip back into the throat, thereby obstructing the airway. The condition may be caused by an improper position of the head or by the careless insertion of the mouth pack.

Cyanosis is a visual indication of anoxemia or lack of oxygen in the blood. It is manifested as a blue discoloration of the tissues. It has no relation to the depth of anesthesia and should be considered a warning sign until proven otherwise. In examining for cyanosis one must consider the normal color of the individual's skin, the thickness of the epidermis, the density of the capillary network and the lighting and color effects of the operating room.

No consideration of general anesthesia for children would be complete without mention of status thymus-lymphaticus. During prepuberty years, the lymphatic tissue throughout the body is considerably enlarged. Emotional excitement aggravates this condition. Many hospitals require that an x-ray of the thymus gland be taken prior to general anesthesia in young children as a means of reducing the size of the gland. Recent studies conclude that the emphasis placed upon this condition in the past has little foundation and that sudden deaths are probably caused by fibrillations.

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Methods for Making More and Better Dental Services Available to Children*

KENNETH A. EASLICK, D.D.S.
Ann Arbor, Michigan

EDITOR'S NOTE:

Ken Easlick, regarded by many as the dean of pedagogues of pedodontics, is also my severest lexicographic critic. He presents in the accompanying paper, a factual picture of dentistry for children, insofar as the teaching of the subject post graduation is concerned. For those of our readers in educational work he projects a goal to seek; for the rest of us, an analysis of what we may expect in the future from qualified specialists in dentistry for children.

I often wonder where Ken finds the time and energy to do so many things in dentistry so well. Seems as tho' he is always a willing counsellor or source of information, yet we see his name on programs of pedodontics nature or continuing education, all over the country. Ken probably finds it easy to spend his free evenings at home, discussing his work and problems with his charming wife, who confided to me recently that "he's a swell dishwasher, too!"

A.E.S.

In the past several years quite a few verbal bricks have been aimed at the schools of dentistry in the United States because inadequate courses in dentistry for children, or none at all, were provided for undergraduate students of dentistry. At the Houston Meeting of the American Dental Association in 1941, the Council on Dental Education decided to require a program of dentistry for children in any recognized curriculum of dentistry. This action has done much, I know, to focus the interest of deans on better teaching of the subject. Today a number of universities provide quite adequate undergraduate courses. Young dentists now graduate after exposure to these improved courses. It should not take long, after the Army and Navy discharge these young dentists, to find out whether the critics were right; the reason so little dentistry has been practiced for children is that the subject has been presented inadequately to students in the schools of dentistry.

Regardless of the present status of teaching and the product of this teaching there still remain those dentists who graduated 5, 10, 20, 30, 40 or 50 years ago. For them there appears to be a need of initial education and to periodic "refreshing" in the technics that are required for the diagnosis, the prevention and the control of the oral conditions of childhood. As time passes the 1947 graduates who go into general practice will require refresher courses and a very few will wish to become specialists. The signs indicate, in fact the present enrollment in the Kellogg Institute of the University of Michigan provides evidence, that a variety of postgraduate and graduate programs already are demanded in dentistry for children.

What this demand becomes in the future will depend upon the manner that the profession or the public elects to provide oral health services for children—whether it will be provided by specialists, by general practitioners in a family practice, by supervised clinicians in school programs. Perhaps all three types of practitioners will continue to demand training. I shall discuss the graduate program first—the one that provides the specialists.

The graduate program, it must be clear, is administered by the graduate school of a university and evidence of a relatively high previous scholarship must be submitted for ad-

*Read before the Conference on Dental Services for Children, sponsored jointly by the American Society of Dentistry for Children and the Council on Dental Health of the A.D.A., February 9, 1947, Chicago, Ill.

mittance to the program and, once admitted, excellent scholarship must be maintained thereafter. A curriculum of required and elective subjects is provided by a graduate faculty along with sufficient clinical experience for the student to master all technics involved. In addition, a problem usually must be selected and, when completed, reported in a thesis. The graduate student is a candidate for an advanced degree; whereas the postgraduate student is a candidate for no degree, save perhaps a certificate of attendance.

It seems pertinent to a discussion of the teaching of dentistry for children to review, at this point, the four teaching objectives which maintain at any level of study—undergraduate, postgraduate or graduate. These four objectives envision teaching which will assure (1) comfortable management of the small patient's behavior, (2) mastery of the scientific clinical procedures which maintain for the primary and immature permanent dentition, (3) a thorough knowledge of the diagnosis and treatment of the growth, development and health problems of the child patient which are pertinent to the practice of adequate health dentistry for him, and (4) the ability to provide accurate, scientific dental health education for the child patient and his parent.

At the moment, I should want to add other specific objectives for at least three types of candidates for degrees: (1) office and practice management for the man who plans to do private practice; (2) teaching methods and statistical procedures for the man who plans to pursue teaching and research; and (3) an appreciation of social change and modern public health practice for the man who expects to direct a public dental clinic for children. Here, in fact, are the three fields for the specialist.

In the past, many of the children's dentists have been mediocre, unscientific operators with a flair for proselytism. As Salzmann remarked a bit acridly in a rather recent editorial, "Children's dentists have campaigned with more knowledge of stage presence than of the scientific technics of dentistry." In the future, if a man is going to be a specialist, he should be capable far beyond his present ability to manage the child patient and insert fillings rapidly enough to make a good profit.

If, again, the *specialist* is truly a specialist, he must be much better fitted to specialize than he will become by the pursuit of 24 to 30 hours of formal, "so-called" basic medical sciences for which a master's degree is granted in the hope that more embryology, anatomy, histopathology, physiology, bacteriology and biochemistry, coupled with more experience in empirical children's clinic technics, will, somehow or other, make a children's specialist of him.

Probably there is a danger that the "blind" assignment by the faculty adviser of "heavy" advanced courses in basic medical sciences will turn out an educated ass who still knows little of the clinical diagnosis and technics for children, which also must be mastered thoroughly in order to become a specialist. Anyone who has pursued a graduate program can recall courses consisting of four hours of lectures and twelve hours of laboratory work per week for a semester, the information from which could have been condensed for his specific purpose into three or four lecture periods or less.

It would appear that the faculty program supervisor must become a faculty coordinator and must develop more coordinated courses which draw from the varied (but pertinent) resources of the university the essential information for the graduate student, and, at the same time, secure a rather startling economy of the student's time. For example, one can envision a coordinated seminar which draws from histopathology, oral bacteriology, caries control, othodontics, oral surgery, dentistry for children, root surgery, pediatrics, internal medicine, nutrition, psychology, growth and development research, endocrinology, anthropology, genetics, and speech rehabilitation and welds these various areas of information into a course in child growth, development and health problems for the children's dentist.

Many of the clinical operative technics for children have yet to be placed on a scientific basis. There is a need that more operative technics be based on a knowledge of developing arches and evolving occlusion. For this type of operative practice the children's operator requires much of the background information about development and occlusion, which the scientific orthodontist requires. He

will be handicapped unless he is competent to diagnose occlusal problems and prevent or intercept those minor occlusal conditions within the province of the children's operator. Probably on the other hand, it would be detrimental to burden him with much of the orthodontist's information about stresses, forces, bone changes and the specialized technics that may be utilized in dentofacial research. Few of the orthodontist's treatment technics appear to be *essential* information for the children's dentist other than a knowledge of the simpler technics which the operator is qualified to utilize.

Much of the literature on operative technics for children is encumbered with directions for cavity preparation which are based on a form to receive highly irrational materials, for example, black or red copper cement, copper amalgam, Kryptex, "Kiddy" cement, "Child Dent," posterior silicophosphate cement filling material, gutta percha, and low-cost casting alloy-materials which subjected to modern tests in the materials laboratory amply demonstrate the irrationality of their use. For this reason it would appear that the graduate student in dentistry for children must have a refresher course in the physical and chemical properties of materials and their clinical manipulation to assure that he is an outstanding clinical operator with the materials which he should employ. Probably the occasional graduate student in dentistry for children should be assigned a problem in the materials department.

Furthermore, much of the literature on cavity preparation for children's teeth violates the engineer's rules for the counteraction of stresses and strains to which filling materials are subjected during mastication. Even yet, much of the recommended cavity preparation is not based on a thorough knowledge of the external and, more important, the pulp chamber anatomy of the primary teeth.

In the pulp management procedures recommended for the primary and young permanent teeth, the literature probably reaches its zenith in empiricism. Many clinicians are violating practically every step of modern root surgery technic in their procedures for the treatment of putrescent deciduous teeth. With *inoperable* root canals, with a *non-sterile* field and technic, with no *bacteriological confirmation* of the elimination of sepsis, with root canals which are not *sealed hermetically,* and with radiological check-ups showing large areas of *bone resorption,* operators still claim to perform adequate root surgery for the primary molars. Success is claimed if, and as long as, the tooth does not reach the acute stage of inflammation again during the patient's period of appointments. Pulp capping is practiced with about the same degree of empiricism.

The faculty coordinator, it appears, must acknowledge that lack of qualification to perform a fine, scientific standard of operative procedures for children certainly will disqualify the children's dentist as a specialist.

Since the specialist probably will be expected to extract children's teeth and perform minor oral surgery about a child's mouth, and since some operators may desire to qualify *adequately* to administer and supervise general anesthetics, time must be found in the graduate curriculum and supervised clinical experience must be arranged to perfect the children's dentist in this phase of his practice. Present experience would indicate that none but the adequately qualified person should attempt to practice with general anesthesia.

To manage scientifically the accidents which occur to so many young anterior permanent teeth, it would appear that the children's operator has the special responsibility to master scientific root surgery technics, including the partial pulpectomy, treatment for putrescent incisors, filling of roots with incompletely calcified apices, root resection and bleaching of discolored crowns. The adequate and esthetic restoration of the crowns of fractured anterior teeth presents another special problem.

Many space maintainers are made in teaching clinics with little thought expended on their need, their anatomical construction, their ability to prevent caries from attacking the abutment teeth, their permanence and their lack of interference with future arch development. Some of them contribute to a malocclusion worse than the loss of space which they are designed to prevent.

In the future it may be anticipated that, more and more, the postoperative supervision

of children with a cleft palate (in Michigan about one out of 560 infants born) will be turned over to the children's dentist. Some small special training may become essential for the children's dentist to fit himself into the modern speech rehabilitation programs which are involved.

It must not be forgotten that a large number of dental anomalies, a special area of the growth and development problems of a children's practice, will be referred to the children's specialist. Hence, the specialist must know how to manage the bizarre conditions presented by the ectopic eruption of first permanent molars, by fused primary anterior teeth, by mid-line, maxillary, supernumerary anterior teeth, by opalescent dentin, by missing bicuspids, by ectodermal dysplasia or by a number of other anomalies.

Radiological technics for young patients are complicated by the behavior of the patients and the frequent need for special information about the growing denture. It would appear that sufficient time must be devoted to radiological diagnosis and the technics for taking and processing the various films which supply information about children, and that actual clinical experience with these technics be maintained until they are mastered.

As caries-preventive technics are developed and their rationality amply demonstrated, the graduate student's curriculum certainly must provide time for clinical experience with such technics.

Finally, it would seem, before a scholarly degree is granted to the candidate, that he should have sufficient experience in the use of library indices and similar sources of information, review the literature in a specialized field, evaluate its scientific accuracy critically complete a problem in this field and report it properly in a thesis which is documented accurately.

Inasmuch as the children's specialist must be highly qualified in most of the clinical technics of adult dentistry and must be thoroughly competent to diagnose and manage the problems superimposed on adult practice by a growing dentition and the exchange of dentitions, it is difficult to anticipate the completion of the master's program in less than three or four semesters. If the master's degree is to be granted for the completion of a stated number of clock hours of required courses at the graduate level, that is one objective; if the degree is intended to label the competent specialist, that is quite a different objective. In the graduate program of many universities the influence of modern adult education has forced the recognition that graduate degrees should not necessarily be limited to formal cultural or formal scientific (research) degrees but that the specialist's degree is a highly important graduate recognition. The postgraduate implications, at the same time, are truly terrific.

In general, it would appear that the graduate program should encompass (1) the graduate course in histology, since dental embryology and histology for the children's dentist, like gross anatomy for the surgeon, require rather continuous review; (2) a course in nutrition; (3) a course in dental bacteriology and caries control; (4) sufficient courses in psychology which emphasize mental hygiene, behavior and development; (5) a course in pediatrics amplified by ward rounds, well-baby and ill-baby conferences, and radiological conferences; (6) lecture-demonstration-clinical courses in the technics of dentistry for children, radiology, exodontia, materials, preventive and palliative orthodontics and root surgery; (7) a coordinated course to present the recognition and treatment of the growth, development and health problems which child patients present; (8) a graduate problem and thesis.

With the graduate program as background, the postgraduate program in dentistry for children may be discussed briefly. For the postgraduate programs, however, one may anticipate the principal demand, since present indications are that the children's specialist will perform a very minor portion of the dentistry practiced for children in the discernible future.

The minimum postgraduate experience for the general practitioner in a family practice who wishes a periodic refresher course in dentistry for children appears, after some experience, to demand a period of approximately two weeks' duration. This period may be a concentrated two-week program at a teaching center or it may be a one-day-a-week program

throughout a semester for those dentists within a comfortable driving distance of the teaching center. This amount of time permits an orderly presentation of subjects by lecture, by staff demonstration and by student operating under supervision. Experience again indicates that all three steps are essential for thorough comprehension of principles and mastery of technics. Probably one of the reasons that the one-day refresher courses sponsored by bureaus of public health dentistry accomplish minimum results beyond the maintenance of interest in child patients, is that they provide little or no time for the other two essential teaching steps, demonstration and practice.

For the person who wishes a more complete experience than that provided by the so-called refresher course, but who does not wish or cannot qualify for a graduate degree, a semester or two semester program may have to be arranged. Four states have dental laws which demand at least one year of postgraduate training, or its equivalent, in order to hold forth to the public that one is limiting his practice to children.

One other type of program is being explored in Michigan, a program that can be taken out for a two weeks' experience in teaching centers that have been located in the more isolated areas of the state. Clinical and teaching facilities will have to be developed and a special staff moved into the center for the two-week period. It is felt that this convenience and reduced expense to the student will secure a greater participation in postgraduate education.

With the problem of provision of postgraduate and graduate experience explored, one may conclude by an examination of the facilities to make such education available, a step that appears highly essential to any recommendations that may come out of this conference. The interest and stimulation of the W. K. Kellogg Foundation of Battle Creek provide hope that future demands for continuing education in dentistry can be met. Probably some light can be thrown on the problem of providing such experience if one were to examine the needs and the facilities in the State of Michigan.

During the year 1946-47, it appears that 5 students will be provided graduate experience, whereas the facilities will accommodate 12 graduate students comfortably. Perhaps the needs of the graduate student can be accommodated for some time in the future.

Postgraduate students enrolled for the refresher course type of experience are expected to number 32, with places available under the present plan for thirty-six. With some additions in staff, courses of this nature probably could be provided for a maximum of 96 students per year. Beyond that number, additional staff and clinical facilities would be needed.

Short postgraduate courses are being presented by the W. K. Kellogg Foundation Institute at the moment in eight specialty fields of dentistry in two-week blocks and four one-week duration. A total of 53 such courses will be presented during the year 1946-47. If the family practitioner of the future were to decide that he should allot two weeks per year to postgraduate work, it would take him ten years to expose himself to the gamut of courses now offered, thus reviewing dentistry for children once every ten years.

Michigan's dental population in 1946, according to the December report of the State Board of Dentistry, was 3248 dentists. Subtracting the State's estimated 222 specialists, who would not be concerned, along with the 39 absentees in the armed forces, leaves 2987 dentists presumably in family practices. Dividing that number by the ten years required to rotate through the refresher courses at the rate of two weeks per year gives 299 dentists per year as a maximum number to be provided experience in each of the recognized postgraduate programs, if all dentists in family practices were to demand a continuous refresher program of this type. This maximum of 299 dentists may be compared with the 96 accommodations available in the present maximum program of teaching of dentistry for children. Extension programs will expand the total facilities slightly. . . . As a prognosis of what the future demand *will* be, your guess is as good as mine.

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Dental Treatment for Children with Congenital Heart Disease

ABRAHAM KANER, B.S., D.M.D. — PAUL K. LOSCH, D.D.S.
Boston, Mass.

EDITOR'S NOTE:

Paul Losch and Abe Kaner are erudite Bostonians, members of our Massachusetts Unit. Paul is a frequent clinician in his section of the country, teaches at Harvard Dental School, and is stomatologist at Children's Hospital in Boston. "Oral Manifestations of Congenital Heart Disease", which appeared in the Journal of Pediatrics, September, 1946, *is a mutual paper by this same team. Abe, who is assistant stomatologist at Boston's Children's Hospital, earned his B.S. at Boston University, and his D.M.D. at Harvard Dental School in* 1944. *It is good to see the younger men of our profession stepping forward with contributions such as we offer to our readers in the following article.*

A.E.S.

Patients from the congenital heart clinic of the Boston Children's Hospital are referred to the Dental Department. Oral examinations are done on all patients admitted to the cardiac clinic for treatment. Visual examinations (mirror and explorer) are carried out. In addition, bite wing or periapical x-rays are taken on all individuals except where not possible because of management problems in very young children. Unnecessary exciting routines are never imposed on these children.

A study of one hundred and thirteen patients has been made in a period of eighteen months. These children ranged in age from ten months to twelve years. Patients with and without cyanosis were observed. In the group without cyanosis, seven patients had coactation of the aorta, three dextrocardia, sixteen patent ductus arteriosus, fifty-two septal defects, ten persistent ostium primum. In the group with cyanosis, eighteen patients had the tetralogy of Fallot, three tetralogy of Eisenmenger, four transposition of the great vessels. In these patients, there is a permanent venous arterial shunt and venous blood in considerable amounts enters the arterial circulation.

It is the author's impression that where cyanosis was present, the incidence of carious lesions of the teeth was elevated above the average Metropolitan Boston child. The marked changes which occur in the buccal mucous membrane, gingivae, and tongue in these patients has been previously discussed. (1)

Upon questioning the parents, the above conditions were explained since it was ascertained that in many cases no dental interference was instituted. Many parents complained that private practitioners were reluctant to treat children with "blueness" and/or "heart trouble". As a consequence, these patients now receive operative and surgical treatment in the Dental Department of the hospital if desired. Others are reassured and returned to the family dentist with a letter explaining the precautions necessary and pointing out the urgent need of service.

Prior to any treatment, a consultation is held with the parents to explain very thoroughly the importance of proper dental treatment in these children. The following factors are stressed:

I. The elimination of all oral infection:
   a) Removal of all abscessed teeth and other foci of infection.
   b) The importance of good mouth hygiene and the prevention of oral sepsis.

II. The necessity for proper restoration and preservation of all carious teeth in order to:
   a) Guard the normal order of development in the transitional dentition.
   b) To promote proper mastication, deglutition, and verbal articulation.

III. Assurance that these patients can withstand all dental procedures, properly

executed, without any ill effect to their health and well being.

The next step in our treatment involves the proper orientation of the patient. The following factors are emphasized:

(1) Allay fear and apprehension. This can be done by explaining to the patient that the pain involved will be controlled or held at a minimum. The authors also find it very helpful and advisable to tell the patient what is to be accomplished at each visit.

(2) The patient is allowed to examine the dental unit and its various attachments (e.g. the air syringe, warm water syringe, and the various movements of the dental chair.)

(3) A simple explanation is given to all patients concerning the use of the most frequently employed instrument (e.g. mirror, explorer, burs, and "drill".) Nothing unexpected is ever imposed on these patients. No attempt is made to save time when serving these children.

After the proper orientation of the parent and patient has been accomplished, the actual treatment is undertaken.

FIRST VISIT: A thorough prophylaxis is given using a Porte polisher and kuroris wood points. Laceration of the gingivae is to be avoided. This procedure is repeated at the second visit where mouth hygiene has been poor and much stain and materia alba covers the teeth. The patients sustaining simple gingivitis improved after a prophylaxis was given and proper mouth hygiene instituted. No other treatment for the gingivitis was necessary. Instruction in toothbrush routine is then given.

SECOND VISIT: At this time, a complete mouth examination is done with mirror and explorer. All carious and missing teeth are noted. A thorough inspection of the lips, tongue, buccal mucosa, gingivae, and pharyngeal fauces is carried out. Where rampant caries is absent, anterior and posterior bite wings are taken. In patients who have a high caries index, a full-mouth periapical survey is taken. The findings of the x-rays examination are recorded after the films have been read. Caries, apical and periapical pathosis, periodontal pathosis and bone structure and chronological sequence are all recorded in the x-ray report.

Subsequent visits are occupied with operative work. It has been our policy to excavate the deepest cavities first. A stiff mixture of zinc oxide and eugenol, to which a drop of phenol has been added, is inserted into the cavity. The mixture is prepared on a preheated heavy glass slab. This zinc oxide is allowed to remain in the tooth for two weeks. After this period, the zinc oxide has hardened sufficiently to be suitable as a base for simple amalgam restorations. Posterior cavities which are relatively shallow are filled immediately with amalgam. All anterior teeth are first filled with zinc oxide and eugenol after all the caries is removed. This filling is again allowed to remain in place for two weeks. At the end of this period, part of the zinc oxide is removed and synthetic porcelain is inserted. Porcelain is never used alone regardless of the depth of the cavity.

In posterior teeth which are badly broken down, but not carious exposures, all the caries is excavated and a heavy layer of silver is precipitated on the hyalinized dentine. The authors employ ammoniacal silver nitrate which is precipitated by eugenol. As a precaution against silver nitrate burns, the tooth is isolated with absorbents and dried thoroughly with gentle applications from the air syringe. The mucous membranes of the cheeks and the surrounding gingivae are swabbed with hypertonic saline solution as an added precaution. In anterior teeth, which are badly broken down, caries is first excavated and the remaining dentine is coated with formalin. This formalin treatment is repeated every two months. It is believed that formalin coagulates the albumen in the dentine and apparently prevents the further progress of caries. Formalin is used instead of silver nitrate because of the objectionable color resulting when this drug is applied.

In teeth where carious exposures exist, no root canal therapy is attempted due to the constant chance of reinfection that exists. The authors, however, realize that space maintenance is an important factor where primary teeth are lost prematurely and for this purpose space maintainers are inserted wherever possible.

The procedures outlined above are carried out similarly on both primary and permanent teeth.

It must be remembered that in treating these individuals, all unnecessary trauma is to be avoided. The amount of operative work done at each sitting is limited to one filling or the excavation of one cavity. Exciting irritability of the patient is avoided and pain is kept at a minimum.

SURGERY: The patient is admitted to the hospital for all surgical procedures including simple exodontia. A complete physical and laboratory check-up is done. Twenty-four hours prior to operation, patients receive penicillin and sulfadiazine therapy. Penicillin is administered parenterally.

All surgery is done under strict aseptic technique in the operating room. Operative preparation is the same as employed for T. & A. procedures. The oral cavity and surrounding structures are thoroughly cleansed with 1:1000 zephiran solution. Gas-oxygen-ether or cyclopropane anesthesia is administered by a trained anesthestist. Local anesthesia is never employed.

The patients are carefully observed on their return from the operating room. Pulse rate, respiration and blood pressure are carefully checked at periodic intervals. Penicillin and sulfadiazine therapy is continued when the patient regains full consciousness until discharge thirty-six hours after operation. The usual local post-operative treatment is prescribed according to needs of the patient. Fluids are forced and good mouth hygiene is maintained.

The maximum number of teeth extracted at one operation is three. Trauma is to be avoided by using a minimum amount of "rocking" during extraction. Soft tissues are always handled gently.

If proper pre- and post-operative precautions are employed, oral surgery can be carried out in these patients with relatively little risk and complete freedom from post-operative complications.

After all treatment is completed, these patients are recalled every three months for dental examinations. A full mouth x-ray is taken every six months and patients are again given instructions in the proper way to maintain good oral hygiene.

SUMMARY: An outline for dental treatment of patients with congenital heart disease is presented.

These patients can withstand the routine dental operative procedures well, bearing these precautions in mind: (1) No unnecessary trauma (2) avoid prolonged procedures at any one sitting (3) allay fear and apprehension on the part of the patient by explaining to the individual, in simple terms, the procedures to be employed, (4) eliminating or minimizing pain.

Amalgam is immediately inserted into all posterior teeth where the cavity is shallow. In deep cavities, zinc oxide and eugenol is used as a base. All silicate fillings have zinc oxide and eugenol bases. No root canal therapy is done due to the danger of reinfection.

All surgical procedures should be carried out in a hospital under strict aseptic techniques. General anesthesia (G. O. E. or cyclopropane) is always employed and local anesthetics are to be avoided. Patients should receive penicillin and sulfadiazine twenty-four hours before operation and this treatment should be continued until discharge.

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P. L.—21 King St., Auburndale, Mass.

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American Academy of Pedodontics

At Ann Arbor, Michigan, February 14 and 15, more than 40 dentists met to organize the American Academy of Pedodontics. Dr. John C. Brauer presided.

Host Kenneth Easlisk discussed the topic, "Pulp Management During the Pre-School and Mixed Dentition Periods," and his two able teaching associates, Doctors Joseph Hartsook and Wm. Brown conducted practical demonstrations of the Vital Pulpotomy Technic.

"Root Filling and Root Resection Technic

for Anterior Permanent Teeth" were discussed in lecture and movies by Dr. Ralph Sommer, while Dr. Philip Blackerby, Jr., Director of the Dental Division of the W. K. Kellogg Foundation, presented "Specialization and the Practice of Dentistry for Children" at an evening dinner held in the Michigan Union.

Aims and objectives for the Academy were set forth as follows by Dr. Maury Massler, Committee chairman: "To achieve by mutual study and cooperative activities, a high and ethical standard of practice, teaching and research in the art and science of dentistry for children."

The Committee on Membership, Walter McBride, chairman, presented the following rules for eligibility for membership, which were accepted:

1. Active Membership—
   A dentist, to be eligible for active membership in the Academy, must:
   (a) be a full-time teacher of Pedodontics of at least 3 years tenure, or,
   (b) be a full-time practitioner of Pedodontics for at least 3 years, or
   (c) have limited his active practice for at least 3 years, to Pedodontics, and devote the remainder of his time to teaching or research in the field of Pedodontics.
2. Honorary Membership—
   Honorary membership will be extended to those individuals:
   (a) who have made outstanding contributions to the art, science or literature of Pedodontics, or
   (b) whose gifts have benefitted Pedodontics.

A temporary Board of Directors, consisting of Doctors John Brauer, Kenneth Easlick, Ralph Ireland, Ruth Martin, Maury Massler, Walter McBride and S. A. MacGregor will determine the date for the next meeting, which will be held at Northwestern University with Dr. George Tuescher, assisted by Doctors Maury Massler and Virgil Cheyne, acting as host and chairman of the Program Committee.

The following were in attendance at the above meeting:

Ralph L. Ireland, University of Nebraska.
Frank Lamons, Atlanta, Georgia.
Maury Massler, University of Illinois.
Glenn C. Miller, Waterloo, Iowa.
Bernard Z. Rabinowitch, Los Angeles, California.
Walter C. McBride, Detroit, Michigan.
Raymond Werther, Philadelphia, Pa.
Ernest F. Ritsert, Philadelphia, Pa.
Elsie Gerlach, University of Illinois.
C. W. Hagan, University of Pittsburgh.
Virgil D. Cheyne, University of Iowa.
George W. Tuescher, Northwestern University.
C. Roy Brooks, Detroit, Michigan.
John M. Clayton, Kansas City, Mo.
Russell K. Smith, University of Texas.
William E. Brown, University of Michigan.
L. S. Pettit, Ohio State University.
Joseph Cabot, Flint, Michigan.
A. J. Zeller, Washington, D. C.
Kenneth L. McKinnon, University of California.
Philip Robin, Washington, D. C.
Walter S. Weisz, Pittsburgh, Pa.
John C. Brauer, University of Washington.
Charles A. Sweet, College of Physicians and Surgeons.
S. N. Rosenstein, Columbia University.
Ewing C. McBeath, Columbia University.
Harold K. Addelston, New York University.
Harold C. Wittich, University of Minnesota.
Eugene J. North, Buffalo, N. Y.
Alfred E. Seyler, University of Detroit.
Samuel Stulberg, Detroit, Michigan.
Dorothy H. Young, University of California.
Elsie C. Schildwachter, Huntington Park, California.
Mary Newell, Chicago, Illinois.
Ruth Martin, Washington University.
R. Duane Hayes, University of Tennessee.
Henry W. Wilbur, Univ. of Louisville.
S. A. MacGregor, University of Toronto.
Kenneth A. Easlick, Univ. of Michigan.
Joseph T. Hartsook, Univ. of Michigan.
W. G. Campbell, Winnipeg, Canada.
Marie Egozcue, Buenos Aires, Argentina.
Sumner A. Russman, Univ. of Michigan.
Laren W. Tevlsch, Ypsilanti, Michigan.

BOOK REVIEW———

Practical Pedodontia or Juvenile Operative Dentistry and Public Health Dentistry

FLOYDE E. HOGEBOOM, D.D.S., F.A.C.D.
Published by
C. V. Mosby Co., St. Louis; 503 pp., 1946.

Dr. Hogeboom's textbook, "Practical Pedodontics," strives to present a comprehensive summary of the main facts associated with dentistry for children. In this fifth edition, published in 1946, Dr. Hogeboom has brought his subject material up to date. His techniques and his technics are as he practices and teaches them. In an informal manner he presents the business side of dentistry and offers advice to the newcomer in the practicing field of dentistry. He devotes a short chapter to the management of the child in the dental office. He treats the subject of embryology and growth and development of the head in a rather detailed manner. In the general discussion about the primary teeth he refers to the effects of prolonged retention and premature loss of these teeth, but in neither this discussion nor in the discussion of cavity preparation does he present any information on deciduous (or primary) pulp anatomy. He gives a detailed synopsis of the filling materials which are, or have been used by the dental profession in caring for children but presents little appraisal of their relative values. He has a short chapter on radiography and a short discussion about the first permanent molar with particular reference to pit and fissure fillings and treatments. Pulp capping and pulpectomy for the treatment of pulp exposures and deciduous teeth are expounded in detail, but pulpotomy is dismissed as not being proven in its practical application.

The problem of interproximal caries in the adolescent is discussed and a comprehensive chapter on habits and habit malocclusions is presented. The biochemical aspects of preventive dentistry with discussions on the balanced diet and on vitamins are set forth, along with a chapter on prevention of dental caries by nutrition.

The problems of space maintenance, chrome alloy appliances and prosthetic appliances for children are presented by Dr. Hogeboom in detail. He gives a classification of fractured and injured incisor teeth of children with treatment for each type, including a pulpotomy technic for the exposed young permanent incisor tooth. He makes no mention of root resection therapy for the treatment and retention of the putrescent anterior tooth.

Realizing that dentistry in most of its phases is practiced with variation from one part of the country to the other, it is easy to understand how opinions are bound to differ. However, one denominator must be common to all and that common denominator is the scientific, biologic approach to the problem at hand. I make particular reference to the utilization of a vital pulpotomy technic for treatment of an exposed vital deciduous molar and the employment of extraction for a putrescent deciduous molar as against a pulpectomy technic for treatment of these same conditions.

My personal appraisal of this book is that the text is complete in most of its parts, but it should stress in detail more of the basic phases which would be of interest to the general practitioner of dentistry. The text is strong on those subjects which the specialist in children's dentistry should know and which the general practitioner could know—i.e., embryology, growth and development problems, habits, space maintenance, prosthetic appliances, endocrine disorder manifestations and preventive orthodontics. For the practitioner who has had little training in the care for children, I would like to see a more detailed discussion on the actual training of the child on his first visit to the dental office, of the variations of techniques of child management with different types of children and of the use of language in the control of child behavior. I would also like to see added, a thorough presentation of deciduous tooth pulp anatomy, a detailed technic for the proper preparation of the proximal cavity, the use of the matrix and the placement and finish of the restoration.

Samuel Stulberg, D.D.S., M.S.
608 David Broderick Tower
Detroit, Michigan.

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AROUND THE COUNTRY

Oh, for the life of a busy Editor! *Al* writes that your reporter's column is not in his hands and already I am one week late! This pleasant "dead line" message arrives as the reporter is on his way for a few days' vacation in Detroit!

Sure, I'll fool the old boss editor! *Ray Taylor* will help edit the news and his swell wife, *Lee,* will do the copy work. At noon Wednesday (3/19/47) editor *Al* will have his column. These dead lines are tough on one old boy who is trying to keep his young interests by learning to fly.

Sure-nuff—by the time this country gossip reaches its readers the writer *should* have his private permit. Any takers for the first ride? Even *Al* is afraid—for shame!

How can you boys even talk today's language if you have not taken up flying? You would be surprised how these six to ten year-olds talk flying. All right, *Al,* I'll give you the news.

A nice long letter from *Joe Peabody,* formerly with the State Health Department, now in private practice as a pedodontist in Houston, Texas. *Joe* is doing a nice job and more will be heard from him later on.

Chicago—On Sunday, February 9th, the Council on Dental Health of the A.D.A. and the A.S.D.C. conducted a joint conference for the purpose of discussing the problems of dental services for children.

While the sessions were open to anyone interested in this problem, invitations were extended primarily to members of state councils on dental health and local chapters of the A.S.D.C. Your reporter understands that editor *Al* was in attendance and he may give a more complete report elsewhere in the quarterly publication.

News of *John Brauer*: *John* took office February 1st as Director of Post-graduate Dental Education and Professor of Dentistry for Children, School of Dentistry, U. of Washington, Seattle.

As you know, *John* formerly taught at the University of Nebraska (now *Ralph Ireland's* post) and the Atlanta-Southern Dental College and was head of the Department of Preventive Dentistry and Director of the Bureau of Dental Hygiene, College of Dentistry, State University of Iowa.

From *Sam Stulberg* of the Michigan Unit we receive the following news: *"Dr. John C. Montgomery,* Detroit pediatrician, was the speaker of the evening at the February meeting of the Michigan Society of Dentistry for Children. He spoke on 'The Care of the Newborn' and presented the experimental data gathered to date on the 'rooming-in' plan at maternity hospitals wherein mother and baby stay in the same room immediately after the birth of the child.

This experimental program is sponsored by a group of Detroit pediatricians, psychiatrists, obstetricians, sociologists and social workers which is called the Cornelian Corner. A basic concept in the group's program is that the origin of adult psychoses and neuroses is to be found in infantile and childhood experiences.

Dr. Montgomery spoke to the largest gathering of the year. The ladies were invited guests. The turn-out and the questions following the talk were testimonial to the interest of the group in this subject.

Massachusetts unit—thanks to Secretary *Mike Cohen*—

"At the November 1946 meeting, *Dr. James Dunning* spoke on 'Statistical Aspects of Dental Diagnosis'. *Dr. Neville Booth* presented a paper supplemented by clinical demonstrations on the general use of anesthesia at the December meeting. The first speaker of 1947 was *Dr. Malvin White,* who lectured on 'Plastic Surgery for Children'. 'Tooth Movement in Children following Extractions' was the title of the essay presented by *Dr. Joseph Volker* at the February meeting. The guest speaker in March was *Dr. Paul Losch,* who spoke on 'Physiological Functions of the Primary Dentition'.

Dr. James Dunning, Dean of the Harvard School of Dental-Medicine, has accepted an honorary membership in this society.

The following members of the Massachusetts Unit presented table clinics at the Worcester District Dental Society:

Dr. M. Michael Cohen: Simple Orthodontic Appliances for the General Practitioner.

Dr. Ronald Wyman: All Phases of Children's Dentistry.

Dr. Harold Berk: Use of Matrices in Children's Dentistry.

Dr. Radar Sognaess: Early Diagnosis of Dental Caries.

WEEI, Boston, sponsored a series of ten medical talks, one of which was on dentistry. *Dr. Paul Losch* spoke on 'Let's Stop Having Dental Cripples'. *Dr. Losch* lectured again at the Parent-Teachers Association in Newton. His subject then was "Dental Care for Children".

In Pittsfield, Mass., *Dr. R. R. Wyman* presented a clinic on Dentistry for Children.

Dr. Helmut Zander, Boston, lectured on "The Effect of Silicate on the Dental Pulp" at the mid-winter meeting of the Chicago Dental Society.

From Louisville, Kentucky, we hear most encouraging news from *Henry Wilbur.* Wish some of you other unit secretaries would take special notice of *Wilbur's* first paragraph:

"My perusal of the current issue of the *Journal of Dentistry for Children* has inspired me this evening to sit down and write you a news item.

"To be sure, it has been some time since you had anything from us down here in Kentucky, and sometimes it takes considerable dynamtie to rouse us; but our interest is still maintained through the *Journal,* and through your very excellent method of keeping everyone informed about the doings of everyone else.

"It has disturbed me somewhat to be here in Louisville where there are activities in practically every field except pedodontics. It has taken me some time to organize the teaching program at school so that I could enlarge my activities in the direction of organizing a state unit of the A.S.D.C. My memories of both the Michigan and Nebraska Units are very kind, and it has embarrassed me a little bit not to have similar activities here in Kentucky. But now at last we are going to form a Kentucky Society of Dentistry for Children. I have contacted men in various parts of the state, and have received enough indication to encourage me to go ahead with plans for a meeting at the time of our State Meeting the end of March. I think our group will be small at first, but very exclusive, and will be made up of men who are really interested, enthusiastic, and willing to try to influence others by their own activities. In other words, we expect the unit to grow.

"Of course, this is pretty nebulous as yet, but we do think that we have made a beginning, which often times is half the battle. I suppose this isn't quite so much a news item now as it will be after the actual formation of the society.

"Our students are also getting an exposure to public health dentistry through an eight day assignment in two health center clinics, one for white children and the other for colored. The students really put in an afternoon's work, and get a good view of the dental problems in children, especially among indigents. This is concrete "stuff", not lecture room. The "concrete" does not mean that we do nothing but cement fillings and extractions at all. If we put in a filling, it is a permanent filling. X-ray equipment is available, and the uses of X-ray in this public health program are emphasized.

"Well, *Stan,* I have gone to quite some length to descrbe the various activities we are carrying on here in Louisville. You know that we are still alive and kicking, and making some progress in bringing light to Kentuckians. We will keep you posted on developments down here, and we are expecting to be on the map in the very near future"—*and with Henry behind the wheel, we know Kentucky is "on the march".*

From Brooklyn, N. Y., we received a complete bulletin of the Section on Dentistry for Children and Preventive Orthodontics.

On March 10th, the boys are honoring the "Father of Preventive Dentistry," *Dr. Hyatt.* The good Doctor is a charter member of the A.S.D.C., as would be expected from any dentist interested in prevention and protection, and has received many honors because of his untiring efforts in urging our profession to FILL the precarious pits and fissures and thus save teeth from final destruction.

Yes, sir,—here is something from Wichita Falls, Texas: *"Robbie" Roberston,* one of the fine fellows your reporter met at Tyler, Texas writes—"I received my first *Journal of Dentistry for Children.* It is most inspirational." At this point your reporter is reprimanded

for keeping *Bob Lipscomb* up until 4:00 a.m., talking dentistry for children. Surely we can not be condemned too severely for this infraction!

Quoting again—"*Stan,* I become more wrapped up in my children's work day by day and cannot understand why more men cannot let this new light into their practice. I know the work I'm doing is more important than all the bridges and dentures placed in adult mouths." To be sure, *Robbie* is right, and all of us who read these words of wisdom will agree. Nice going and let us hear from you again, *Robbie.*

More news from Brookyn, N. Y. *Howard Zuelch* writes,—"Having been a neighbor of yours through your column for some time, I feel that I would like to say something, but never had anything to say. However, the enclosed Bulletin of the Second District gives me the opportunity. Following the first issue of the Bulletin, our attendance at the children's section about doubled."

Thanks a lot, *Howard.* Get the inspiration again, and all you other interested "pedodontists" send some news.

Detroit—Regarding our good friend *Walter McBride.* He and the good wife are off again on the annual southern vacation. *Mac* always manages to combine pleasure with business and again is doing some clinic work in the sunny south. Our old friend (and my room mate in Ann Arbor a few weeks back), *J. G. Williams* of Atlanta, Ga., is taking good advantage of *Walter's* willingness to share his vacation time, and several meetings have been arranged for *Walter's* splendid presentation of Dentistry for Children. *Walter's* old ulcers just can't take *J. G.'s* marvelous mint julips, so I know the dental meetings will receive unadulterated children's dentistry!!

Minnesota—The School of Dentistry and the University Extension Division presented a two-day study course devoted to the subjects pertaining to and including Children's Dentistry.

Dr. Walter McBride presented Diagnosis; Psychology and Management; Treatment of Exposed Pulp; Space Maintainers; Fractured Anteriors and Caries Prevention.

Dr. Harold C. Wittich presented Cavity Preparation for Deciduous Teeth.

Table clinics were also presented on the second day by various state and outstate clinicians. From all reports, two profitable days were afforded the large attendance, and dentistry for children in Minnesota continued to lead the parade of interest.

The following are the newly elected officers of the Missouri Unit: *Dr. Florence Rich,* President; *Dr. J. E. Rook,* Vice-President; *Dr. John N. Klingler,* Secretary-Treasurer; *Dr. J. C. Gordon,* Council; *Dr. J. M. Jolly,* Council; *Dr. Walter Ford,* Council.

Regular meetings of the Unit have created new interest among the returning service boys and a real year of activity and interest is predicted by *Secretary John Klingler.*

Cleveland—The Seventh Annual Children's Dental Health Day may be history, but each year this Cleveland meeting becomes more and more a national event.

Al Sadd acted as general chairman, with a capable staff of committee chairmen and workers. *Ralph Creig* as publicity chairman and toastmaster supreme, and *Carl Miller* as program chairman, are fixtures of the Cleveland meeting.

Ken Easlick did our Society proud by his presence as one of the key speakers and clinicians. *Rene Rochon* of Detroit (Dean of the U. of Detroit Dental School) presented his unusually instructive "X-ray technics and Interpretations" clinic. *Dr. Katherine Greene,* Bloomfield Hills, Michigan, capably presented the subject, "Young Children's Growth and Needs". All in all, it was a splendid testimonial to the efforts of Cleveland's progressive dental society and its active, energetic official family.

From Tennessee—

Again, after a lapse of several years due to the war-time emergency, the Tennessee State Dental Association in cooperation with the Tennessee Department of Public Health presents the Fifth Seminar on the timely subject of "Preventive and Protective Procedures Involved in the Care of Children's Teeth".

This year *Dr. Joseph T. Hartsook* of the University of Michigan, School of Dentistry and *Dr. Henry M. Wilbur* of the University

Louisville, School of Dentistry are to conduct the Seminar.

The Seminar will be held for a six weeks' period from June 9—July 19, 1947 in six of the larger cities throughout the State. An interesting three-day program is planned in which the first two days will be devoted to lectures by *Dr. Hartsook* and *Dr. Wilbur*. The Association plans to go "big time" by including a limited attendance demonstration clinic on the third day. The two-chair demonstration will include prophylaxis and flouride treatment, also, operative procedures involved in the placement of proximal fillings in primary teeth and occlusal fillings in young six-year molars. A one appointment pulpotomy technique will be demonstrated in both primary and permanent molars.

An attendance fee of $10.00 will be charged and there is to be given to each dentist a manual covering the content of the course and also a Certificate of attendance.

C. L. Sebelius, Director,
Postgraduate Seminar.

—and from *Gertrude Tank,* Secretary of our Pennsylvania Unit: "At our meeting of March 17th, *Doctor Jack M. Wisan,* President of the American Society of Dentistry for Children, Chief of the Division of Dental Health of the New Jersey State Health Department, spoke on "Can Private Practitioners Be Motivated To Do More and Better Dentistry for Children?"

On April 21, *Dr. Raymond Werther,* Instructor of Dentistry for Children at the Dental College of the University of Pennsylvania spoke on "Operative Procedures for Children's Teeth with Special Emphasis on Cavity Preparation". We also showed a film on matrices, published by the American Dental Association.

At the annual meeting of the Philadelphia County Dental Society on February 5, 6, and 7th, the members of the Pennsylvania Unit of the American Society of Dentistry for Children participated actively. A whole morning was given to a Topic Discussion on Dentistry for Children, conducted by members of the Pennsylvania Society of Dentistry for Children. *Dr. Ernest F. Ritsert* was the moderator. *Doctors J. Horace Githens, H. Vernon Lapp, Ralph Orner,* and *Raymond Werther* were the discussors.

At the topic discussion on "Roentgenology", *Dr. William J. Updegrave* was one of the discussors.

Table Clinics were given by the following members:

1. *Dr. B. Elizabeth Beatty*
   "Silver Nitrate in Dentistry for Children"
2. *Dr. Geneva E. Groth*
   "Preventive Orthodontia"
3. *Dr. Edward Ray Strayer*
   "Orthodontic Analysis and Treatment Planning"
4. *Dr. Gustav C. Tassman*
   "Tooth Formation"

At the meetings of the Pennsylvania State Society in Philadelphia in May, the Pennsylvania Society of Dentistry for Children will give a three-hour session on Dentistry for Children with *Dr. F. W. Nash* from Scranton, Pa., *Dr. William J. Updegrave* from Philadelphia, *Dr. Raymond Werther* from Philadelphia, and *Dr. Walter S. Weisz* from Pittsburgh, Pa. as speakers.

A.S.D.C.'ers figured prominently in the program of the Wisconsin State Dental Society's Annual meeting in early April. *Harold Wittich,* Director of the Pedodontic Department at the University of Minnesota, and *Ralph Campbell* of Detroit, presented papers. *Dr. Roy Ellis,* newly appointed Dean of the School of Dentistry at Toronto, Canada, author of a fine text on fractured anterior teeth, reviewed in our Journal several issues back, presented his treatise on "Injuries to the Teeth of Children."

The Nebraska Unit presented a two-day program March 17 and 18 at the Nebraska College of Dentistry. Under the direction of *Ralph Ireland,* practical operative procedures were demonstrated, a pediatrician presented the medical aspect of dentistry for children, and *Arlo Dunn* held forth on Orthodontics. *President E. J. Dailey* tells us the program was extremely successful. (Ed. note: *Ex-President Raf Ireland* should be gettin' around to having his local Unit act on elimination of that "Promotion" pretty soon!)

Frank Tuma of our Ohio Unit decided he'd like to see what Michigan could teach him

besides Dentistry for Children, hence his two-week stay at Ann Arbor for a postgraudate course in "Oral Surgery", early in March. Rumor has it *Frank* has developed a new type of self-igniting matches—merely a side line with this talented chap, however!

Dick Howard of Indianapolis, after an unfortunate office-renting experience, is at present associated with our friend *Donal Draper* (of Mucostatics fame), in the Hume-Mansur Bldg., and teaching Pedodontics part-time at the University of Indiana.

It was good to hear *Elsie Gerlach* rise to the defense of dental school teachers at the Conference on Dental Services for Children at the Chicago meeting. *Elsie* believes the students are taught well enough, but fall by the wayside after graduation.

Harvey Janke of Cleveland also presented some good suggestions at the Conference. His experience as Chairman of the Cleveland Children's Dental Health Day lends weight to his words.

"Director of Post Graduate Education and Refresher Courses in Pedodontics and Associate Professor of Operative Dentistry"—Yep, the whole title belongs to *Charlie Sweet* who retired from active practice January 2, 1947. Good luck to you *Charlie*; and perhaps now you'll stop losing your hair!! (What hair ? Ed.)

In the late mail comes word that *Haidee Weeks* of New Orleans must retire from active practice due to a serious accident. President of the American Society of Dentistry for Children in 1934, and one of its most active supporters in the early days, *Haidee* endeared herself to all who knew her. We wish for her a retirement from physical effort only, and many years of an avocation of her choice.

Cleveland reports the following officers elected to serve its local chapter: *L. Hatch Clark,* President; *Phillip Burwasser,* Vice-President; *Irving Tapper,* Secretary-Treasurer; *Carl Miller,* Program Chairman; *Norman Denner,* Membership Chairman. *Chester Schultz,* President, and *Regina David,* Secretary continue to serve the Ohio State Unit.

New Michigan Unit officers elected at the Anuual Meeting held during the Michigan State Dental Convention April 15, 1947 are *Sam Stulberg,* President; *Joseph Hartsook,* Vice-President; *Harold Maxmen,* Secretary-Treasurer.

Speaker at the Luncheon meeting was *Dr. George Tuescher* of Northwestern University, who appeared on the State meeting program. More than 100 guests were present including *Carl Miller* and *Harold Sell* of Cleveland.

Newly associated with *Frank Lamons* is *Dr. Mary Lynn Morgan,* who is limiting her practice to pedodontics. *Mary*'s address is 203 Doctor's Bldg., Atlanta, Georgia and we hope to meet her in person at the national meeting in August to congratulate her on her choice of associates!

Ken Easlick sent me the following information from our *Havana, Cuba* colleagues. To promote the study of dentistry for children in *Cuba,* there has been organized the *Cuban Society of Dentistry for Children.* Officers are *Doctors Carlos A. Criner Garcia, Francisco Leon Lara, Miguel Sacerio Coro, Laura Canizares Verson, Ernesto Cepero Bonilla, Salvina Rodriquez, Emma Gonzalez, Cesar Mena Aquirregaviria, Valentin Suarez Rubi, Roque Medina Larrauri.* To them we offer our sincere congratulations, good wishes, and a promise to cooperate with them in every way.

Editor Al tells me that despite the fact that *Mike Cohen* of our Massachusetts Unit is working hard on the A.S.D.C. program for the Boston meeting, he finds time to send in many papers for our Journal, all well written and interesting. Hope we get to meet him this summer to express appreciation.

It was with a deep sense of shock and loss to our Society that we learned of the sudden death, on April 16, of *Don S. Goudey* of California, at the age of 41. *Doctor Goudey* was an associate editor of our Journal, and a recent member of the official family of our Southern California Unit.

This department is conducted by Stan Brown. Please direct items of interest to him at Ithaca, Michigan.

Problems Associated with the Availability of Dental Services for Children*

OREN A. OLIVER, D.D.S.
Nashville, Tennessee

The problem of dental care for children undoubtedly presents one of the most significant challenges facing the dental profession today. In contrast to the reputation that American dentistry has established for the superior quality of its restorative services, its record of dental care for children is one in which we thoughtful dentists can take little pride. Probably because of the very nature of the outstanding progress which has been made in the art and science of restoring and replacing teeth, the dental profession has been inclined to place major emphasis, in its efforts to provide for the tremendous needs of the population, upon this phase of dental practice. Furthermore, the apathetic attitude of the American public toward prevention has been such as to encourage the dental profession to maintain this philosophy of curative rather than preventive service. In the face of increasing demand from the adult population for elaborate restorations, and a continuing lack of pressure upon the profession for prevention through the adequate care of children, it is not surprising that dentistry has concerned itself principally with the problem of accumulated dental disease in adults and has found little time to devote to the more constructive and preventive types of services that might be provided for the child population.

It has been said on many occasions that not more than 25% of the population of the United States is receiving reasonably adequate dental care at the present time. In spite of the fact that the dental profession is working at its maximum capacity and the economic status of the population probably is better than at any time in the history of the United States, there is a lack of dental care now given to children. Of eight thousand six-year-old children examined in Tennessee, an average of over five untreated dental defects per child was found, with less than four per cent of all the children showing evidence of previous dental care in the form of fillings. Of the entire group, less than two fillings per 100 children were found in the permanent teeth. These conditions do not forcibly focus our attention upon the need for more dental care for the child and upon the lack of services now rendered.

An approach to the problem of actual availability of dental services for the total population must take into consideration a number of factors which have a very practical and significant bearing upon the problem.

These factors may be considered to include:

1. The prevalence of dental disease, or the need for dental services.
2. The number and age of the practicing dentists.
3. The geopraphic location and accessibility of the dentists.
4. The efficiency of the dental practitioners.
5. The practice philosophy of the dentists.
6. The effective demand for dental services.
7. The cost of dental care.

The nature of the most common dental disease, caries, is such as to make possible a fairly accurate quantitative measurement of its prevalence and of the time requirements for its treatment. Under present circumstances, however, and particularly in the case of dental caries among children, the need for dental services must be considered in terms of both the initial and maintenance needs which must be met if complete care is to be provided. Thus, in considering the question of dental services for children, the dental defects which have accumulated as a result of

*Read before the Conference on Dental Services for Children, sponsored jointly by the American Society of Dentistry for Children and the Council on Dental Health of the A.D.A., February 9, 1947, Chicago, Ill.

neglect, as well as the defects which are continuing to occur annually, must be taken into account in establishing the level of need. Furthermore, with expanding knowledge in dentistry and the increasing possibility that effective preventive measures may become available in the future, this phase of dental service and the manpower requirements which it involves must be provided for in the formulation of any plan for the dental care of children.

The number of dentists available is an obviously important factor which must be taken into consideration; and the future level of dental personnel, so far as it can be predicted from existing trends, cannot be overlooked. For example, it was apparent before World War II that the number of graduates from dental schools in the United States was gradually decreasing, in spite of a steady increase in the general population and a growing demand for dental care. The average age of the dentists now in private practice is a factor in the dental service now available for children. The older dentists in practice cannot be expected to do the quantity of dentistry for children that the younger ones can. Generally, the older man may not possess the patience, the tact, or the technic for handling the child patient that he possessed several years ago. Not only the number, but also the age of the dentists is therefore an important factor involved in estimating the relative availability of dental services for children. The younger dentists will have to assume an increasing important role in the dentistry rendered to children.

Thirdly, the geographic location of the practicing dentists throughout the United States is another extremely significant factor and serves to emphasize the point that, in the provision of dental care, accessibility is just as important as availability. The tremendous variation in dentist-population ratios, among the various geographic regions of the United States, illustrates the fact that existing dental personnel may be reasonably adequate in some areas, but grossly inadequate in others. It has been shown however, that even in many metropolitan areas where the dentist-population ratio is most favorable and considered to be reasonably adequate, the status of dental care for children is not much better than in the rural areas where dentist-population ratios are decidedly unfavorable. It is fundamental, nevertheless, that an *equitable distribution of dental personnel* is essential if dental services are to be made available to the entire population. Conditions may require the establishment of clinics, in schools or in public health centers, in order to make dental services accessible to children. Possibly this is true nearly everywhere in rural areas. Mobile dental units may be required widely if maximum accessibility is to be provided in isolated sections of the country. In any event, as in every phase of health service, some provision will have to be made for correcting the imbalance between urban and rural sections, and between the various geographic regions, in the distribution of dental personnel.

This is a factor which has been responsible, in a large measure, for the proposals which have been made from time to time for the training of a new type of dental personnel to provide for the needs of children. This economic factor must be adjusted properly, and unless the dental profession is willing to assume greater responsibility in the care of children, it will continue to be extremely difficult to develop a satisfactory defense against such proposals. Thus, provision must be made for increasing the financial attractiveness of dental services for children as well as for changing the dentist's professional attitude and the public's evaluation of such services, if they are to be made available to the maximum degree.

The effective demand for dental services is the sixth of our seven points for discussion. This is another factor which is closely related to the problem of relative availability, and is determined largely by the existing level of dental health education in the general population. For many years, the public has shown an apathetic attitude toward dental care for children, but this attitude has improved steadily in recent years as a result of the efforts of public health agencies and dental organizations which have accepted responsibility in this field. The dentist who has assumed the responsibility of dental education at the chair should and can aid in increasing the effective demand for dental care for children. The public must be brought to understand that as

long as its demands for adult dental services are such as to require practically all of the professional time of the available dentists, it will be impossible for children to receive the dental care to which they are entitled and which is the most constructive and lasting type of service which dentistry has to offer. Furthermore, it is primarily the responsibility of the dental profession itself to bring about this change on the part of the public and to resist the temptation to submit to the pressure of present adult demand.

It is not unheard of to learn of a dentist who states openly that he works for adults only or, something still worse, makes excuses and false statements asserting the foolishness of filling the baby or temporary teeth, as he may call them, because they will soon be shed and, anyway he says, "It is a waste of money." If we are to justify dentistry's position as a health profession, we cannot continue indefinitely to function principally as dispensers of restorative and prosthetic services for adults. And we certainly cannot belittle an important part of our field. Do we build health? Do we grasp dentistry, in its large aspects?

Finally, comes the factor of cost. The cost of dental services has a direct bearing on the effective demand of the public for such services and, therefore, an indirect relation to the question of availability of dental services. The present public concept of the high cost of dentistry has been developed largely as a result of the traditional neglect of dental care for children and the resultant need for expensive reparative and restorative services for adults. For example, approximately 60%, or $300,000,000, of the $500,000,000 spent for dental services annually during recent years has gone to cover the cost of prosthetic appliances made necessary largely as a result of dental neglect in childhood and early adult life. Prevention would be cheaper. The cost of preventive and protective dental services, begun at an early age, is relatively small and is probably not beyond the financial ability of a very large majority of the population. The cost of overcoming early dental neglect is, on the other hand, not only high and therefore unattainable by many, but it is an unnecessary cost which could be avoided if early provision were made for adequate care in childhood.

This is a point which must be continuously stressed in the development of a program for extending dental services to the general population and for keeping the cost of dental care at a reasonable level which is within the reach of most of the people.

The clamor for "socialization" of dentistry, put forward by half-thinking social reformers, is largely based on this off-balance conception of dentistry which the public has. Early neglect is expensive. The cost of repairing damage, which was long blithely permitted, until it produced a crisis is, in truth, often prohibitive. But this is not chargeable to dentistry. If dentistry, in all its aspects, is utilized throughout life, its total cost is preeminently reasonable. The cost of ignorance and neglect is always high. Socialization would not touch the essence of the problem.

In view of existing limitations of personnel it is of paramount importance that the efficiency of each practicing dentist be developed to a maximum extent if full utilization of the existing personnel is to be expected. Auxiliary assistance is partly the answer. We should be realistic, in this connection. If we would take into consideration the possibilities for increased use of auxiliary dental personnel and facilities, in order that the practicing dentist himself may be permitted to devote proportionately more of his time to those aspects of dental practice which are most exacting in their demands upon his professional ability. It has been shown, for example, that a dentist practicing with a second chair serves a patient load approximately 25% larger than that served by a dentist using only one chair, and that by the employment of a dental assistant as well as a second chair, the dentist can serve approximately 63% more patients. Furthermore, the use of a dental hygienist and a dental laboratory technician will enable a dentist to serve a still larger number of patients. As Don Clawson says, he could then use his third or fourth set of hands. In spite of these facts, only half of the dental profession were employing dental assistants at the beginning of the war and only about 4% were using dental hygienists. Although the number of practitioners utilizing the services of commercial dental laboratories is very high and has been increasing steadily, the number

who have employed full-time technicians in their own offices has been exceedingly small. The reasons for this failure to take advantage of the opportunities for increased efficiency through the use of auxiliary personnel have been many and complicated, but there seems to be ample justification for urging, in fact insisting, that steps be taken to provide for the training, in adequate numbers, of auxiliary personnel in order that they may be made available to the dental profession, and in order that the services of the practicing dentists themselves may be extended to a substantially larger part of the population, and particularly to a much larger number of children. Sound practice management might also increase the availability of dentistry to children by means of a more efficient and smoother run office.

Many of the dental schools have been reluctant to initiate courses for the training of dental hygienists, and practically none have been willing to accept responsibility for the training of dental assistants and dental technicians. At the present time, only one school, the Meharry Medical College, is providing training for all three types of auxiliary personnel, in addition to dentists. It is imperative that other schools, as quickly as possible, should follow the example set by Meharry. It is altogether logical and economically sound that we should strive to attain maximum utilization and efficiency of existing types of dental personnel and resources, as well as to embark upon a program of training a substantially larger number of dentists. It is of the utmost importance, however, that safeguards be established in order that the additional time which may be made available to dentists, through the intelligent use of auxiliary personnel, should be utilized first for those aspects of dental practice which are most neglected at the present time—namely, dentistry for children, preventive orthodontics, improved diagnosis, periodontia and preventive measures. We cannot justify, under any circumstances, if we think in terms of public welfare, an increase in the percentage of the dentist's time devoted to restorative and prosthetic services for adults at the expense of additional preventive and remedial services, especially those for children.

The practice philosophy of dentists is a direct reflection of their undergraduate training. Up to the present time it has been responsible in a large measure for dentistry's neglect of its responsibilities in the care of children. The problem of availability of dental service for children, therefore, must take into account the attitude of the dentist toward the various professional obligations which he has accepted upon entering the practice of dentistry. The child patient has been almost completely ignored in many dental schools. Even of the younger dentists, many had no training toward service to children. Dental schools have been, and still are, reluctant to include much dentistry for children in the school curriculum. If the dentist has had comparatively little training in pedodontics, and if there are few or no apparent opportunities for continued education for the practicing dentist to correct this deficiency, it is very unlikely that he will be interested in or feel qualified to discharge his responsibilities for the care of children. Furthermore, if the utilization of dental laboratories and auxiliary personnel, for the practice of prosthetic dentistry, permits the dentist to attain a much higher financial return for services in this field than he can attain in other areas of practice, such as dentistry for children, he can be expected to continue to give a disproportionate part of his time to those services which are most remunerative.

A thorough study and interpretation of all of dentistry and its objectives is desirable at this time, if intelligent planning for the future of our profession is to be done, and the problems of dental services for children may be considered to constitute one of the most significant justifications for the initiation of such a study. Dentistry has performed a tremendous service in the past, and is deserving of the highest commendation for its accomplishments. But as in every other field, it is necessary from time to time that a re-interpretation of objectives and methods be made in order that the contributions of research, the expanding body of scientific knowledge, the changing social trends, and the broadening philosophy within the profession itself may be given their proper places in the developing and greatly widening pattern of dental practice.

Availability of Dental Services for Children as Viewed by a State Dental Director*

LEROY JOHNSON, D.D.S.
Columbus, Ohio

Are dental services available to children? If not, why not? My answer to the first part of this question is, "Adequate service is certainly not available." The answer to the "Why not?" is that the dental profession has failed to live up to its responsibility.

Let us examine some facts. Last December, in Ohio, a Workshop on Community Dental Health Planning was held in Columbus, under the auspices of the State Council on Dental Health, and the Division of Dental Hygiene of the Ohio State Department of Health.

The conference brought forth certain statements such as this: In order adequately to correct the dental defects now existing in the mouths of the people of the United States, it would require the services of 400,000 dentists working full-time for one year at an approximate cost of five billion dollars. There are at present some 70,000 dentists in this country.

Why has this problem developed to such extravagant proportions? The workshop's answer was that neglect of the mouths of children in the preschool years and in the years of greatest caries susceptibility resulted in such an accumulation of defects that it was impossible to control them by our usual mechanical methods.

Why is this so? It is a situation that *must* be met by the general practitioner. The number of men in this country limiting their practices to children's dentistry is extremely small. In the State of Ohio there are 4000 practicing dentists and three full-time pedodontists. The public is ready and anxious to have this work done because parents have been convinced of the importance of this service by the many programs of dental health education presented to laymen during the past few years. The fact is that the demand is far greater than the supply. It is apparent that our efforts will henceforth, of necessity, be directed toward the dentist himself.

I am a general practitioner but, perhaps unfortunately, I am not a typical one. Fully sixty percent of my practice consists of children. Child patients are sent to me by other dentists who feel fairly sure I will not work on the parents, and since I do not wish to limit my practice to children for various reasons I am forced to refuse many who beg to be admitted. Not because I am any better as a dentist but simply because I am willing to work for children.

Why do not dentists take proper care of their child patients? I have asked this question of thousands of men in the twenty years I have been giving clinics and refresher courses, and the answers are always the same. They are two. One is that the management of children in the office is too worrisome, and the other is that they feel that they cannot be adequately paid for the service.

I have always felt that both of these answers are based upon fallacious reasoning. Management is a technique that can be taught just as well as techniques for taking a lower impression; and the fact that dentists can be well paid for children's service can be demonstrated by practical examples in almost any community. People are willing to pay for any service which they consider valuable, and they are now largely convinced that proper dental care is necessary for the health and happiness of their children.

In fairness to the dentists themselves, it must be admitted that they have been victims of bad education along these lines both in school and out. Lectures and clinics have been largely devoted to technical operative procedures, with only the most cursory attention paid to management and economics. Further strengthening that quaint bit of dental folk-

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lore which maintains that children's dentistry is a half-fare operation is that dentists are constantly being importuned by well-meaning do-gooders to donate their services for clinic or school. This is wrong; dentists must be paid well for their work with children because it is more important than any other service. It is my opinion that this economic factor is at the core of our answer to the question.

Our task is to treat the problem of economics with detachment and balance. On the one hand we want the financial reward to be such that our profession will attract good men. On the other hand we do not wish money to be the main objective.. Enlightened educators in our time are greatly concerned with the direction that our professional education is taking. They feel that medicine and dentistry are becoming mere vocational training courses wherein a boy may learn a few tricks which will enable him to go out into the world and earn a good living. Additional courses are constantly being added to the curriculum but these are mainly technical. But, as Hutchins says, you cannot simply take a boy, like a sack, and stuff him with facts. Somewhere along the line he should learn to think, to judge values. Only by giving a student some cultural background, some knowledge of the poetry, philosophy and art in our western cultural heritage can we produce the kind of man we want to carry on our fine profession.

Is it not a certain point of view that we need to solve this problem? A man who has no other objective than the making of money has no more business entering dentistry or medicine than he has of entering the ministry. There are many modes of compensation other than money. The social position that goes with the title of "Doctor", the sense of freedom that goes with being one's own boss, the privilege of regulating the conduct of the profession through a system of ethics which is recognized by law—all there are valuable considerations, but in return one must recognized by law — all these are valuable ligation to the community to safe-guard the health of its citizens.

The alternative to dealing with the economic problem in this manner is to subsidize services to children through government grants or to develop a highly trained public health organization to take over this branch of dentistry—a movement which is gaining great impetus. For the public is determined that it will get the service that it wants. If the private dentist will not give it to them it will get it in some other manner.

As the representative of the general practitioners, I feel it is my job to present to you as many points of contention or opposition to children's dentistry as I have encountered in my relations with my fellow dentists so that they may be laid out to your scrutiny and serve as guinea pigs to our experimental surgery here today.

In my talks with dentists, from the practitioner in small country towns to the men with offices in the heart of the city, the objections had a significant consistency: Management and economics. This then should be the point of attack. How shall we do it? In the past, our efforts in this direction have been what I like to call the revival meeting method. Possibly one meeting a year was held in the interest of children's dentistry. Speakers would hold forth with lofty phrases and certain brethren would hit the saw-dust trail. In a week or two the spirit would weaken and, before long, all was forgotten.

We are told that the essence of good pedagogy is repetition, and here is where our local councils on dental health will function. American dentists are splendid men, the finest dentists in the world. When at last they achieve the proper perspective toward the care of children, our ideal will be on its way toward realization. I have seen it happen in a small way in such groups as our recent workshop in Ohio where practicing dentists left their offices representing every economic level to give willingly of their time and energy to serve the public welfare. It is my hope that this conference will furnish further fuel so that the spark now visible will kindle into a blaze.

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